Subpart 151.25—Environmental Control

§ 151.25–1 Cargo tank.

When carrying certain commodities regulated by this subchapter, one of the following types of cargo protection may be required, within the main cargo tank, and in some cases, in the space between the primary and secondary barriers.

(a) *Inerted.* All vapor spaces within the cargo tank are filled and maintained with a gas or vapor which will not support combustion and which will not react with the cargo.

(b) *Padded.* All vapor spaces within the cargo tanks are filled and maintained with a liquid, gas (other than air), or vapor which will not react with the cargo.

(c) *Ventilated (forced).* Vapor space above the liquid surface in the tank is continuously swept with air by means of blowers or other mechanical devices requiring power.

(d) *Ventilated (natural).* Vapor space above the liquid surface in the tank is continuously swept with atmospheric air without the use of blowers or other mechanical devices requiring power (e.g., ''chimney-effect'' ventilation).

(e) *Dry.* All vapor space within the cargo tank is filled and maintained with a gas or vapor containing no more than 100 ppm water.

[CFGR 70–10, 35 FR 3714, Feb. 25, 1970, as amended by CGD 88–100, 54 FR 40040, Sept. 29, 1989]

§ 151.25–2 Cargo handling space.

Pump rooms, compressor rooms, refrigeration rooms, heating rooms, instrument rooms or other closed spaces regularly entered by operating personnel, in which work is performed on the cargo or in which the cargo movement is locally controlled, may be required to be fitted with one of the following types of ventilation:

(a) *Forced ventilation.* The forced ventilation system shall be designed to insure sufficient air movement through these spaces to avoid the accumulation of toxic or flammable vapors and to insure sufficient oxygen to support life, and, in any event, the ventilation system shall have a minimum capacity sufficient to permit a change of air every 3 minutes.

(b) *Natural ventilation.* The natural ventilation system shall be designed to insure sufficient air movement to avoid the accumulation of toxic or flammable vapors and to insure sufficient oxygen to support life.

Subpart 151.30—Portable Fire Extinguishers

§ 151.30–1 Type.

When required by Table 151.05, approved portable fire extinguishers shall be installed in accordance with Subpart 34.50 of this chapter. The fire extinguishing media shall be dry chemical or other suitable agent for all locations.

Subpart 151.40—Temperature or Pressure Control Installations

§ 151.40–1 Definitions.

This section defines the various methods by which the cargo may be heated or cooled.

(a) *Boiloff.* Cargo pressure and temperatures are maintained by permitting the cargo to boil naturally and the cargo vapor thus generated removed from the tank by venting.

(b) *External cargo cooling*—(1) *Cargo vapor compression.* A refrigeration system in which the cargo vapors generated within the tank are withdrawn, compressed, and the lower energy vapor or its condensate returned to the tank.

(2) *External heat exchange.* A refrigeration system in which the cargo vapor or liquid is cooled outside the cargo tanks by being passed through a heat exchanger. Refrigeration is not accomplished by direct compression of the cargo.

(c) *Internal heat exchange.* A refrigeration system in which a cooling fluid is passed through heat transfer coils immersed in the cargo tank liquid or vapor phases.

(d) *Tank refrigeration.* A refrigeration system in which the cooling fluid is passed around the cargo tank exterior in order to remove heat from the tank or its surroundings.